

The Continuous Application of Paint, Via a Traditional Paint Brush

Background of the Invention

The invention relates to the common paint brush and devices using bristle-type fibers or a foam core-type brush to apply paint to a surface, and in particular to a device that allows any ordinary paint brush to have a stream of paint delivered to the bristle, foam, or other applicator end in an intermittent fashion, more or less paint, under the control of the operator at will.

The application of paint or coloration of a surface, via a brush or brush-like device, in order to improve its appearance or preserve the underlying substrate, is a common procedure that is well known. Over the years, paint brushes, consisting of wood or other material used to construct a handle and having attached a series of bristles or bristle-like material, which have the ability to retain a volume of paint, when the said bristles are dipped into a paint can, are then used in a back and forth motion by the hand of the operator to apply the paint onto a surface. Many improvements in the basic brush have been made over the years, including different brush shapes, different non-brush materials, such as soft, pliable foam, etc., to accommodate the ever-changing chemical makeup of the paint itself. The introduction of latex or water based paints over the traditional oil based paints, has lead to many changes in brush materials and the composition of the applicator end of the brush. Many years ago, the paint roller was invented and allowed the operator to apply the paint to the surface with a much faster application rate and smoother resulting surface. Recently, the "power roller" has been introduced, which is a device which allows the operator to continuously apply the paint to the surface, via a tube connection to the paint source. This feature eliminates the need for the operator to continuously dip the roller into the paint tray once the roller itself delivers all of the paint to the surface which it can hold. The paint sprayer is also available for use by the operator, this having a fine spray delivered to the surface to be painted. However, none of the above described devices which can alternate for the traditional paint brush can act as a substitute or provide the convenience of the traditional paint brush-type tool in many applications, including such work as molding and window-type trim painting, when the material has already been installed. Millions of paint brushes are sold yearly and there are some applications in which it is the best alternative for providing a swift and accurate application of the various types of paint. However, the greatest drawback of the traditional paint brush is the fact that it can only hold a given amount of paint at any one time. If the brush is dipped into the paint can and too much paint is gathered onto the brush, dripping of the paint occurs and, oftentimes, the paint flows onto the handle and even onto the operator's hands. In the other situation, in which too little paint is gathered onto the brush, the paint does not spread very far and the operator may spread out the paint too thin for proper coverage. In other words, only the proper amount

of paint can be gathered onto the brush and applied to the surface at one time to allow for effective paint coverage as well as not having too much paint to deal with. The problem is that, in order to do any extensive painting with a conventional brush, hundreds of repeated dips of the brush into the paint can are needed to deliver the proper amount of paint from the can to the surface. This action alone markedly slows the entire painting process and contributes greatly to operator fatigue. It would be a great improvement to have the ability to have a paint source close at hand to the tip or lower portion of the brush bristles, which, at the discretion of the operator, could deliver a measure of paint directly to the brush end and, in effect, provide a continuous, non-dripping paint application of the paint material to the surface with no interruption or dipping into the can. Not only would there be a great deal less time spent in completing the paint job, but the entire painting process would be far less tiring, having many fewer wasted arm and hand movements. It would be further desirable to be able to use any of the common paint brush types or sizes in conjunction with the continuous paint system, and not be forced to rely on a series of special painting tools, if the applicator end were to become fouled with dry paint, or dropped onto an unclean surface, etc. and the operator not having the supply of specialty applicators available.

Over the years, a great number of differing paint, stain and paint-like materials have been developed. These products have varying viscosities and flow rates, as well as various chemical compositions. The most common types are based on either an oil or water base. Several of the older type finishes such as varnish or shellac are ideally applied in as continuous a manner possible in order to flow the material onto the surface with as little delay as possible and minimizing brush strokes for a fine, smooth finish. A system allowing for a continuous flow of material would greatly aid in material application.

It is the object of this invention to provide a painter or person wishing to paint a surface, with a device that is capable of utilizing a standard, off the shelf paint brush, that when combined with a pump and flow tube, which connects a paint supply vessel with the brush in such a way as to deliver a measured flow of paint material, via a button signal, which activates the pump, the paint flowing through the connecting tube and, when properly attached to the paint brush, delivers the paint to the working end of the brush in such a manner as to provide the operator with what would amount to a continuous flow of paint. This system would allow the operator to control not only the amount of paint applied to the surface at hand, but measurably speed up the entire painting process, as well as assure a quality, even application of paint material with far less time spent and far less operator fatigue than the traditional "dip and paint" method.

SUMMARY OF THE INVENTION

In the preferred embodiment, the invention consists of a number of interrelated members, that when joined together consist of a standard, off the shelf paint brush as is commonly found universally, consisting of a wooden, or other material, handle, a metal or other material binding strap which secures the "brush" end, be it bristles, foam or other material, to the handle, in addition, a rigid, stationary platform of approximately two inches in length and one and one-quarter inches in width, which is placed and located on the "connecting strap" area of the paint brush. This stationary platform has a pair of semi-circular retaining clips centrally located, which function as a holding apparatus for a rigid, removable tube that can, summarily, be attached and removed at will to the stationary platform. The stationary platform also features two internally threaded knobs at either end of the platform which can be turned on a screw, which projects from below the platform. This screw is an integral component of a disk-like boss at one end, the purpose of which is to pass through and engage a slot in two separate "J" shaped brush clamps, which are positioned below and contiguous to the stationary platform, the boss being below the brush clamp on each of the two sides. The purpose of the adjustable brush clamps is to provide the option of securing the device to brushes of differing widths, be it 2 inches, 2 1/2 inches, four inches, etc. Additionally, the brush clamps could be conformed to retain a round-type brush such as a "sash tool". When in use, the stationary platform is positioned onto the paint brush in the area of the "connecting strap" and the two brush clamps are firmly snugged against the sides of the brush, and then the two nuts on the top of the platform are tightened onto the projecting screw, the boss engaging the underside of the brush clamps thus providing a secure, friction-type retention of the stationary platform to the brush itself, both from top to bottom and side to side. The purpose of securing the stationary platform to the paint brush in this manner is to provide a secure, stable surface for a rigid, removable tube, which is itself attached to the platform via a pair of centrally located, semi-circular retaining clips, these clips being an integral part of the stationary platform. The tube itself has a series of concentric depressions which interlock and engage the tube with the platform retaining clips. These "detents" in the tube allow the tube to be firmly positioned along the longitudinal axis of the brush at the operator's discretion. The aforesaid tube is of such construction that a length of some of the tube projects beyond the stationary platform onto the handle area of the brush and at its termination, acts as a receiving end for another flexible tube. This secondary flexible tube acts as a connector and paint transfer vehicle from its termination at one end of the rigid tube at the paint brush, continuous to and connecting to a vessel, which itself contains a volume of paint at some distance from the brush. The other termination of the rigid, removable tube features a flattened, ovoid aperture, the whole of which is triangular in appearance, when viewed from the top surface. The purpose of this aperture is to distribute a volume of paint, which itself has been delivered to this point from the distant paint vessel, via the flexible connecting tube to the opposite end of

the rigid tube. The triangular-shaped aperture serves two distinct functions, i.e., that of restricting the flow of the paint, via the narrowed opening and also providing a wider, fan-like paint distribution pattern. Furthermore, the triangular-shaped terminus of the rigid, removable tube is positioned on the top surface of the "bristle" end of the paint brush in such a manner as to deliver a controlled volume of paint onto the bristles, foam, or other material of the brush. This paint volume is then allowed to penetrate into the brush surface, however, the position of triangular-shaped terminus of the rigid tube in relation to the "bristles" in no way interferes with the flexing of the bristles and or their action of spreading the paint onto the to-be-painted surface. Furthermore, there is another fan-shaped structure or member also known as the "distribution apron", that consists of a flat, triangular array of bristles, foam or other material, which is separately bound together and attached to an integral pair of semi-circular clips on its underside. These clips engage the rigid, removable tube in an area of the tube somewhat in between the triangular-shaped tube terminus and the tube's own attachment to the stationary platform clips. The purpose of this additional structure or member is twofold, that is, in one instance, this member acts as a "paint shield", preventing the paint which has been delivered to the brush surface via the rigid removable tube from dripping away from the brush, as the paint is thus confined between this structure or member and the brush surface itself, should the brush be turned over in the hand of the operator, and, more importantly, the structure or distribution apron, whether fabricated out of brush-like bristles, a triangular piece of foam or flexible plastic-like material both having a series of fan-shaped ridges on its underside, acts to distribute the paint in a fan-like pattern over a larger width of the bristle area and closer to the working ends of the bristles. In addition, this structure or member does not restrict the movement of the working end of the brush and, in actuality, compliments its action, by allowing a measured flow of paint to be delivered to the working end of the brush and to provide an even, dripless, flow of paint material, which is then evenly applied to the surface to be painted.

When assembled and attached to the paint brush in the proper order, the stationary platform with attached rigid tube and sequentially attached distribution apron, provide a conduit by which a volume of paint can be delivered from a remote paint container source, via a flexible connecting tube from that source to and connected with the rigid, removable tube, the whole allowing the paint to be delivered from the remote source via an electrically activated pumping mechanism to the working end of a standard paint brush, providing an un-ending and continuous flow of paint, which is then applied to the surface to be painted without ever having to move away from the to be painted surface. Furthermore, a control button is provided, which is connected to the electric pump and finger mounted to the operator via a simple ring-like structure, which, when the operator were to press the control button against the brush handle, would activate the pump in an on-off manner and transfer the paint via the flexible tube connected remote paint vessel through the further connected and brush-mounted rigid, removable tube, thence, delivered via the end of the tube into a confined area between the paint brush itself and the limiting and distributing apron, thusly, the paint volume being ready and waiting to be applied to the to be painted surface via the bristle or other end material of the brush to the surface in a continuous, uninterrupted manner, with no necessity to further access a paint can. The entire collection of member structures of the device allow the operator to provide a

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superior paint application to any surface requiring a brush in a rapid manner with greatly reduced fatigue. Further consideration of such a system as described in reference to the above device, but in no way changing the function of the device, would be to feature a alternate means of attachment of the centrally positioned rigid tube on the top surface of a paint brush, if the brush were to be very large, and, thusly, rendering the stationary platform and attached "J" shaped brush clamps aforementioned not of a convenient size to accommodate both the smaller and very large brush sizes, this to be accomplished via a broad band of flexible material, having centrally located a series of simple cuts or perforations and, at its ends, areas of re-usable self-adhesive material, such as Velcro, the same which when the tube is securely passed through the cuts or perforations in the flexible material longitudinally in an alternate up and down "sewing the tube through" manner, secures the rigid tube to the flexible band, the same band then being tightened around the paint brush and securely fastened, via a friction fit, by the closure of the self-adhesive material upon each other, providing a platform for the rigid tube, and allowing the operator to apply paint in the traditional manner of a paint brush, as and when the paint is delivered to the rigid tube and, thusly to the brush. Although it would be possible to deliver the paint to the brush end via a hole bored into and through the brush structure itself, this would require a "special" brush or some type of structural adaptation that would be out of the realm of the traditional, off the shelf paint brush, the same requiring modifications that would require the operator or painter to purchase a separate, altered paint brush at a much higher price than the standard off the shelf paint brush, which is readily available and, in addition, to switch brushes of differing textures, sizes, etc., during the course of the work if the job were to warrant such application with no interference with the overall paintwork, thus saving time and interruption delay. Also, it would be possible to deliver paint via a spray-atomizing type of nozzle to the brush tip, but this would tend to increase the volatile fumes aspect of especially oil based paint types, to the detriment of the operator. In addition, the above described device, having a narrowed orifice at the terminus of the rigid tube, has the ability, via small changes in the diameter of the opening to act as a nozzle if so desired and, due to varying pump pressures or types of pumps, could handle any flow rate of paint material, be it slow, continuous dispersion or, if the pump pressure were more substantial, even a modified enclosed spray pattern. From all considerations, it is most desirable to deliver the paint to the surface to be painted, when using a paint brushing technique, in the standard, traditional manner, which the above-described device allows, being attached either by a stationary platform and integral brush clamps or by a large piece of rectangular-shaped flexible material, the same having self-adhesive strips at its ends and integral cut or perforated slots centrally located to receive the rigid paint tube, but with the added convenience of a continuous or intermittent proximal paint source delivered directly to the working end of the paint brush, effecting a "continuous" flow of paint from the brush to the surface to be painted.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective of the illustrative embodiment of this invention

Fig. 2 is a top view of the rigid, removable paint tube, separate from its incorporation and inclusion in figure 1

Fig. 3 is a top view of the stationary platform, showing the preferred location on the top side of a traditional paint brush and also illustrating the position of the pair of centrally located retention clips and the left and right tightening knobs, these being supported and resting on the top surface of the stationary platform

Fig. 4 is a top view of the left and right movable "J" shaped brush clamps, featuring slots which enable the brush clamps to be summarily moved back and forth on the underside of the stationary platform, providing a good degree of adjustment

Fig. 5 is a frontal view of the stationary platform with attach "J" shaped brush clamps on the underside of the stationary platform and having a "see through" view of the retaining screw and integral boss, the same passing through the left and right brush clamp and through the underside of the stationary platform, emerging on the top surface of the stationary platform and engaging and being attached via threads, to the threaded knob, which is positioned on the top surface of the stationary platform and, in addition, the pair of flexible retaining clips shown in the centrally located position on the top of the stationary platform

Fig. 6 is a top view of a traditional paint brush with attached stationary platform, movable brush clamps, the rigid, removable paint tube being centrally placed and retained on the stationary platform via the flexible retaining clips and the distribution apron in position over and connected to the rigid, removable paint tube

Fig. 7 is a side view of the paint apron with attached underside retaining clips, the same being directly over the rigid, removable paint tube and awaiting attachment to the tube, via the clips

Fig. 8 is a view of the underside of the distribution apron showing the retaining clips and fan-shaped placement of the embossed ridges, these being an integral part of the structure

Fig. 9 shows a frontal view of a paint holding cup with attached protective top and holding bale, the same having a narrowed ending orifice which is capable of having a flexible tube attached to the ending and the tube flow being controlled via a restricting clamp

Fig. 10 shows a top perspective view of the rectangular-shaped piece of flexible material, the same having a series of cuts or perforations centrally located on the material, which allow the rigid tube to pass longitudinally through the perforations in an up and down "sewing-type" insertion into the flexible material, and, the piece of material having an area of self-adhesive material on the upper and lower termini of the material piece, the same adhesive areas to be connected and held together firmly when joined circumferentially.

DETAILED DESCRIPTION OF THE INVENTION

As shown in Fig. 1 an illustrative embodiment of the device which allows a measured stream of paint to be channeled from a remote paint vessel to the working end of a traditional paint brush and being summarily attached to the brush, whose handle 1 forms the upper portion of the brush, allowing the operator to grasp the brush in the hand, this having attached bristles 9 or other material such as dense foam, etc. comprising the working end of the brush, the same attached to the handle and being retained onto the handle via a metallic or other material "connecting strap" 24, thus exhibiting the well known form of a traditional paint brush in common use, to which has been attached a stationary platform 4, some 2 inches by 1 and one half inches in measurement, being approximate, which, to its underside has attached left and right "J" shaped brush clamps 7, which they themselves having the ability to be adjusted or moved to accommodate the various widths of different sizes of standard paint brushes, via integral slots and these clamps being attached to the underside of the stationary platform via two threaded screws with attached and integral flat bosses, the same passing through the brush clamp slots and through onto the top surface of the stationary platform 4 and being engaged by two threaded knobs 6, allowing for the clamps to be securely tightened to the stationary platform in the desired position, relative to the width of the traditional paint brush. The rigid, removable paint tube 3 with integral detents 16 is attached to the top of the stationary platform 4 via a pair of flexible retention clips 5, these clips engaging the rigid tube 3 in the detent 16 grooves in such a manner as to provide a firm, immovable connection between the tube and the platform and also permitting stable lengthwise adjustment of the tube in relation to the "bristle" end of the paint brush. Shown at one end of the rigid tube 3 is a connection with a flexible tube 2 attached securely, but having the ability to be removed at will from the rigid tube and, at the other opposing terminus of the rigid tube, an attached distribution apron 8, this being located at a convenient distance from the working end of the paint brush "bristles" 9. The flexible tube 2, proceeding from its attachment on the rigid tube 3, continues for some length and terminates within the confines of a remote paint holding vessel 12 to its terminus, connecting there to a tube 15, which is itself a paint siphon, thus allowing the paint to be continuously or intermittently pumped up and through the flexible tube 2 via an electric pump 11, the same which is connected to a power source via a power cord 13 and a plug 14. The flow rate of the paint can be adjusted via a regulation knob 10 on the top of the pump. Alternately, a battery-powered pump could be used to eliminate the connection to a electric outlet. In addition, a connecting wire 17 is attached at its one end to an electric control button 19, the button having an integral ring-like attachment 18, this having the capability of being placed on a convenient finger of the operator of the device, and the other end of the wire attached to the electric pump. When the button is firmly pressed onto the handle 1 of the brush, it would then activate the pump to provide a flow of paint

from the remote vessel, via the flexible tube into and through the rigid paint tube 3 and onto the "bristle" surface 9 of the brush.

Fig. 2 shows a top view of the rigid paint tube 3 as a separate entity for illustration purposes and with the one end of the tube connected to a flexible tube 2, this tube providing the paint supply when attached and securely connected to the rigid paint tube 3, providing a continuous or intermittent, uninterrupted stream of paint, which is then expressed at the other terminus 20 of the rigid tube 3. The terminus 20 is flattened, and somewhat fan-shaped, having a narrowed, ovoid orifice, which tends to restrict the overall flow of the paint volume as well as acting as a spreading mechanism, when the paint exits the terminus 20 and proceeds onto the bristle area of the paint brush. Furthermore, a series of separately spaced grooves or detents 16 are placed on the main barrel of the rigid paint tube, allowing interdigitation with the centrally positioned flexible clips that are found on the top of the stationary platform, the detents 16, in turn aid in holding the rigid tube firmly in position within the confines of the stationary platform, as well as providing the operator with the mechanism to properly locate the rigid tube 3 in the most ideal position with respect to the paint delivery from its terminus 20 to the bristle portion of the brush.

FIG. 3 shows a top view of the stationary platform 4 in the correct position on the top surface of the brush "connecting strap" 24, along with a view of the integral flexible retaining clips 5 as well as showing the location and position of the tightening knobs 6.

Fig. 4 shows a top view of the left and right "J" shaped brush clamps 7, complete with the adjustment slots 25

Fig. 5 shows a frontal view of the stationary platform 4 with the centrally located flexible retaining clips 5 and tightening knobs 6 on the top surface of the platform, and the "J" shaped brush clamps 7 correctly positioned underneath of the stationary platform 4 and connected to the platform via a screw and integral disc-shaped boss fixture 22, the same passing through the adjusting brush clamp slots and through the stationary platform, as well as being terminally engaged via a thread into the tightening knobs 6.

Fig. 6 shows a top view of the main body of the traditional paint brush, with a portion of the handle 1, metal or other material "connecting strap" 24 and the brush bristles terminus 9, the whole of which has the stationary platform 4 positioned over the "connecting strap" 24 area and the "J" shaped brush clamps 7 securely snugged against the sides of the brush and the whole of which is tightened together via turning the tightening knobs 6, providing a secure, non-movable apparatus which, in turn, can hold the rigid, removable paint tube 3, longitudinally positioned in relation to the main axis of the paint brush and connected to the stationary platform 4 via the centrally located flexible clips 5, the clips engaging the proper incised tube detent 16 in order to provide the proper relationship of the rigid, removable paint tube 3 to the correct position on the top surface of the bristle portion of the paint brush, furthermore, the distribution apron 8 is firmly fixed in position on top of the rigid, removable paint tube.

Fig. 7 shows a side view of the distribution apron 8 with attached and integral centered flexible retaining clips 21, these being able to be attached to the waiting rigid, removable paint tube 3.

Fig. 8 shows an underside view of the distribution apron 8 with centrally positioned flexible retaining clips 21 and a representation of the fan-shaped and radiating pattern of a series of paint-directing grooves 23, which aid in the dissemination of the paint stream emanating from the rigid paint tube, when in place over the said tube.

Fig. 9 shows a side view of a funnel-like vessel 26 having attached at its constricted end, a flexible tube 2 on which there is positioned in a convenient location an adjustable clamp 28, which is used to regulate the gravity flow of the paint or stain material through the tube and, in its course, being delivered to the rigid, removable paint tube on the paint brush. Furthermore, a bale 27 is provided in order to hang up the vessel 26 in a location higher than the paint brush device when in use in order to provide a simple gravity flow of the paint material at the discretion of the operator. In addition, a snap-on lid 29 is provided to seal the contents of the vessel and prevent spillage and there appears a centrally located hole 30 in the top of the lid to allow for air pressure equalization of the paint contents when leaving the vessel.

Fig. 10 shows a rectangular-shaped piece of flexible material 31 so sized as to fit on the connecting strap of a larger traditional paint brush, the same having a series of cuts or perforations in the material, and the material itself being raised 32 or lowered 33 in sequence to effect a channel whereby the rigid paint tube may be inserted in a "sewing-type" manner longitudinally through the material and held in position, centrally on the connecting strap of the paint brush, the whole of the flexible material to be wrapped around the larger paint brush in a cuff-like manner, tightly, via joining the reusable self-adhesive tab areas 34 at the terminus of each end of the flexible material together, and thus forming a completed closure of the flexible material circumferentially around the connecting strap of the brush.

It is apparent from the descriptive drawings, Figures one through ten, that the device aforementioned consists of a standard paint brush to which is attached a series of interrelated components, which when connected in the proper fashion, that is a stationary

platform of rigid, non-flexible material, is positioned over the metal or other material connecting strap of the paint brush, this area which is centrally located on the brush, connecting the handle with the bristle or other material end of the brush, and this platform having a pair of flexible retaining clips which are designed to grasp in a non-movable manner a rigid, removable paint tube, which is itself longitudinally positioned along the long axis of the brush, one end having attached a flexible tube, this tube continuing for some distance and being connected to a remote paint vessel, which is equipped with an integral pump and paint siphon tube, this having the ability to be electrically activated by a operator-held control button, which is itself connected to the pump unit and the paint thus expressed by the pump itself is propelled inside of the flexible tube and thus entering the rigid, removable paint tube on the brush when connected to the same, the paint volume further proceeding down the length of the rigid paint tube and being expressed from its other terminus, which consists of a flattened, triangular area having a constricted, ovoid aperture, the paint then being delivered onto the bristle area of the brush in such a manner as to penetrate the bristles and provide for a paint source, which is then spread in the traditional manner onto a substrate paint surface by the end movement back and forth of the bristle tips and, furthermore, that a distribution apron is placed over and upon the rigid paint tube in such a position to allow the apron to confine the paint volume thus expressed from the rigid paint tube and also to direct the paint in a fan-shaped distribution pattern to the working end of the brush as well as preventing excessive dripping of the paint, should the brush be turned over in any position by the operator. Furthermore, it would be possible to utilize a rectangular-shaped piece of flexible material with a series of cuts or perforations centrally and longitudinally placed on the material, the material in between the perforations being placed in an upper or lower alternating position, effecting a channel for the rigid paint tube to be summarily threaded through and thusly held in position centrally on the connecting strap area of a larger paint brush, via a joining of the two ends of the flexible material circumferentially around the paint brush with integral and attached strips or areas of reusable self-adhesive material closing together to effect a cuff-like structure, this material however, not effecting in any way the operation of the rigid paint tube, distribution apron, or dispersion of the thus provided paint onto the brush for traditional brush-work painting. The sole purpose of the stationary platform with the attached "J" shaped brush clamps or the rectangular flexible piece of material with its centrally located perforations is to confine, hold and provide a non-movable entity for the rigid, removable paint tube and to provide the capability for various brush sizes to utilize the rigid paint tube and distribution apron system for continuous or intermittent paint flow. It is also evident that paint or paint-like stains are formulated in different consistencies and flow at differing rates and that it may be advantageous to have a vessel that would allow a gravity flow of material to the paint brush via the paint delivery tubes, etc. as shown in Fig. 9.

As various changes can be made to the above construction without departing from the scope of this invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limited sense.